Listing of Claims

1. (Previously presented) A composition comprising:

an arylsulfinate salt having an anion of Formula I

$$Ar^1—SO_2^-$$

I

and having a cation that contains at least one carbon atom and either a positively charged nitrogen atom or a positively charged phosphorus atom, wherein $Ar^1$ is a substituted phenyl, an unsubstituted or substituted $C_{7-30}$ aryl, or an unsubstituted or substituted $C_{3-30}$ heteroaryl, said substituted $Ar^1$ having a substituent that is an electron withdrawing group or an electron withdrawing group in combination with an electron donating group; and

a triarylsulfonium salt,

wherein the composition generates a radical upon exposure to actinic radiation in the wavelength range of 400 to less than 1000 nanometers and wherein the composition is free of an additional component that absorbs actinic radiation in the wavelength range of 400 to less than 1000 nanometers.

2. (Original) The composition of claim 1, wherein the $Ar^1$ group of the arylsulfinate salt is anthryl, naphthyl, acenaphthyl, phenanthryl, phenanthrenyl, perylenyl, anthracenyl, anthraquinonyl, anthronyl, biphenyl, terphenyl, 9,10-dihydroanthracenyl, or fluorenyl, wherein said $Ar^1$ group is unsubstituted or substituted with an electron withdrawing group or an electron withdrawing group in combination with an electron donating group.

3. (Original) The composition of claim 1, wherein the $Ar^1$ group of the arylsulfinate salt is quinolinyl, isoquinolinyl, quinazolinyl, quinoxalinyl, cinnolinyl, benzofuranyl, benzomercaptophenyl, benzoxazolyl, benzothiazolyl, benzimidazolyl, indolyl, phthalazinyl, benzothiadiazolyl, benzotriazinyl, phenazinyl, phenanthridinyl, acridinyl, or indazolyl, wherein said $Ar^1$ group is unsubstituted or substituted with an electron withdrawing group or electron withdrawing group in combination with an electron donating group.

4. (Original) The composition of claim 1, wherein the $Ar^1$ group of the arylsulfinate salt is a substituted phenyl, an unsubstituted or substituted naphthyl, or an unsubstituted or substituted anthraquinonyl, said substituted $Ar^1$ group having a substituent that is an electron withdrawing group or an electron withdrawing group in combination with an electron donating group.

5. (Original) The composition of claim 1, wherein the $Ar^1$ group of the arylsulfinate salt is phenyl substituted with an electron withdrawing group selected from halo, cyano, fluoroalkyl, perfluoroalkyl, carboxy, alkoxycarbonyl, aryloxycarbonyl, halocarbonyl, formyl, carbonyl, sulfo, alkoxysulfonyl, aryloxysulfonyl, perfluoroalkylsulfonyl, alkylsulfonyl, azo, alkenyl, alkynyl, dialkylphosphonato, diarylphosphonato, aminocarbonyl, or combinations thereof.

6. (Original) The composition of claim 1, wherein the anion of the arylsulfinate salt is 4-chlorobenzenesulfinate, 4-cyanobenzenesulfinate, 4-ethoxycarbonylbenzenesulfinate, 4-trifluoromethylbenzenesulfinate, 3-trifluoromethylbenzenesulfinate, 1-anthraquinone sulfinate, 1-naphthalenesulfinate, or 2-naphthalenesulfinate.

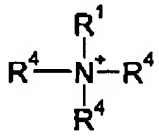
7. (Original) The composition of claim 1, wherein the cation of the arylsulfinate salt is a ring structure comprising a 4 to 12 member heterocyclic group having a positively charged nitrogen atom, said heterocyclic being saturated or unsaturated and having up to 3 heteroatoms selected from oxygen, sulfur, nitrogen, or combinations thereof, wherein said ring structure is unsubstituted or substituted with a substituent selected from an alkyl, aryl, acyl, alkoxy, aryloxy, halo, mercapto, amino, hydroxy, azo, cyano, carboxy, alkoxycarbonyl, aryloxycarbonyl, halocarbonyl, or combinations thereof.

8. (Original) The composition of claim 7, wherein said heterocyclic group is bicyclic.

9. (Original) The composition of claim 7, wherein said heterocyclic group is fused to a cyclic or bicyclic group that is saturated or unsaturated and that has 0 to 3 heteroatoms.

10. (Original) The composition of claim 7, wherein said heterocyclic group is fused to an aromatic ring having 0 to 3 heteroatoms.

11. (Original) The composition of claim 1, wherein the cation of the arylsulfinate salt is of Formula II



II

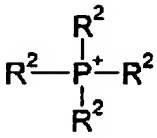
where

$R^1$ is an unsubstituted alkyl, an alkyl substituted with a hydroxy, an unsubstituted aryl, or an aryl substituted with an alkyl, hydroxy, or combinations thereof; and

each $R^4$ is independently hydrogen, an unsubstituted alkyl, an alkyl substituted with a hydroxy, an unsubstituted aryl, or an aryl substituted with an alkyl, hydroxy, or combinations thereof.

12. (Original) The composition of claim 11, wherein the cation of the arylsulfinate salt is a tetraalkylammonium ion.

13. (Original) The composition of claim 1, wherein the cation of the arylsulfinate salt is of Formula III



III

where each $R^2$ is independently an unsubstituted alkyl, an alkyl substituted with a hydroxy, an unsubstituted aryl, or an aryl substituted with an alkyl, hydroxy, or combinations thereof.

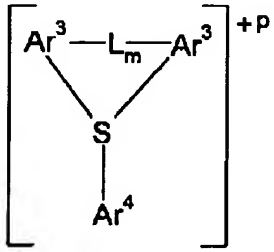
14. (Original) The composition of claim 1, wherein the anion of the arylsulfinate salt is a benzenesulfinate substituted with an electron withdrawing group electron selected from halo, cyano, fluoroalkyl, perfluoroalkyl, carboxy, alkoxycarbonyl, aryloxycarbonyl, halocarbonyl, formyl, carbonyl, sulfo, alkoxysulfonyl, aryloxysulfonyl, perfluoroalkylsulfonyl, alkylsulfonyl,

azo, alkenyl, alkynyl, dialkylphosphonato, diarylphosphonato, aminocarbonyl, or combinations thereof and the cation of the arylsulfinate salt is a tetraalkylammonium ion.

15. (Original) The composition of clam 1, wherein the arylsulfinate salt is tetrabutylammonium 4-chlorobenzenesulfinate, tetrabutylammonium 4-cyanobenzenesulfinate, tetrabutylammonium 4-ethoxycarbonylbenzenesulfinate, tetrabutylammonium 4-trifluoromethylbenzenesulfinate, tetrabutylammonium 3-trifluoromethylbenzenesulfinate, tetrabutylammonium 1-naphthalenesulfinate, tetrabutylammonium 2-naphthalenesulfinate, or tetrabutylammonium 1-anthraquinonesulfinate.

16. (Original) The composition of claim 1, wherein the arylsulfinate salt is tetrabutylammonium 4-ethoxycarbonylbenzenesulfinate or tetrabutylammonium 4-cyanobenzenesuflinate.

17. (Original) The composition of claim 1, where the triarylsulfonium salt has a cation according to Formula V




V

wherein

each $Ar^3$ and $Ar^4$ are independently a $C_{6-30}$ aryl or a $C_{3-30}$ heteroaryl that is substituted or substituted with one or more substituents, each substituent having up to 30 carbon atoms and up to 10 heteroatoms selected from N, S, O, P, As, Si, Sb, B, or Ge;

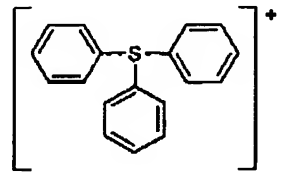
L is a divalent linking group selected from a single bond, oxo, thio, sulfinyl, carbonyl, sulfonyl, methylene, or imino;

p is an integer equal to or greater than 1; and

m is an integer equal to 0 or 1.

18. (Original) The composition of claim 1, wherein the triarylsulfonium salt has an anion selected from $AsF_6^-$, $SbF_6^-$, $BF_4^-$, $PF_6^-$, $CF_3SO_3^-$, $HC(SO_2CF_3)_2^-$, $C(SO_2CF_3)_3^-$, $N(SO_2CF_3)_2^-$, tetraphenylborate, tetra(pentafluorophenyl)borate, and tetra(3,5-bistrifluoromethylphenyl)borate, p-toluenesulfonate, or combinations thereof.

19. (Original) The composition of claim 1, wherein the triarylsulfonium salt has a cation selected from



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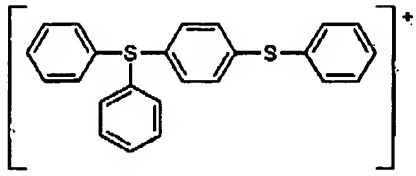

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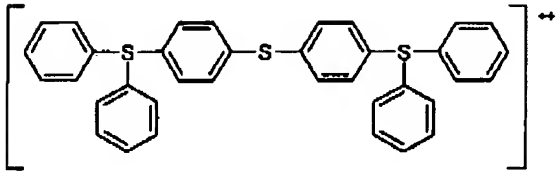

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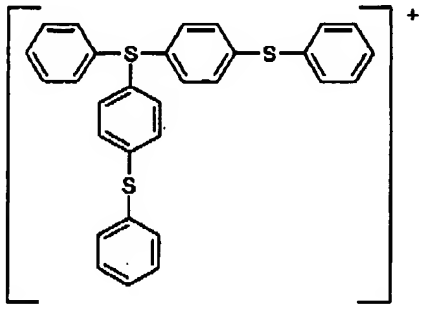

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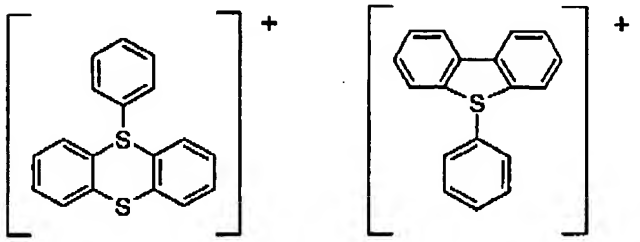
or combinations thereof that are unsubstituted or substituted with one or more substituents selected from alkyl, alkylcarbonyloxy, alkynyl, alkoxy, alkoxycarbonyl, alkylthio, arylthio, aralkyl, alkenyl, aryl, arylcarbonyloxy, arylcarbonlyamido, alkylcarbonylamido, aryloxy, aryloxycarbonyl, alkoxysulfonyl, aryloxysulfonyl, alkylsulfonamido, N-alkylaminocarbonyl, N-arylaminocarbonyl, N-alkylsulfamyl, N-arylsulfamyl, alkylsulfonyl, arylsulfonyl, perfluoroalkyl, perfluoroalkysulfonyl, azo, boryl, halo, hydroxy, mercapto, diarylarsino, diarylstibino, trialkylgermano, trialkylsiloxy, or combinations thereof.

20. (Original) The composition of claim 1, where the triarylsulfonium salt has a cation selected from



or combinations thereof that are unsubstituted or substituted with one or more substituents selected from alkyl, alkylcarbonyloxy, alkynyl, alkoxy, alkoxycarbonyl, alkylthio, arylthio, aralkyl, alkenyl, aryl, arylcarbonyloxy, arylcarbonylamido, alkylcarbonylamido, aryloxy, aryloxycarbonyl, alkoxysulfonyl, aryloxysulfonyl, alkylsulfonamido, N-alkylaminocarbonyl, N-arylaminocarbonyl, N-alkylsulfamyl, N-arylsulfamyl, alkylsulfonyl, arylsulfonyl, perfluoroalkyl, perfluoroalkysulfonyl, azo, boryl, halo, hydroxy, mercapto, diarylarsino, diarylstibino, trialkylgermano, trialkylsiloxy, or combinations thereof.

21. (Original) The composition of claim 1, wherein the triarylsulfonium salt has a cation selected from triphenylsulfonium, diphenylnaphthylsulfonium, tritolysulfonium, anisyldiphenylsulfonium, 4-butoxyphenyldipenylsulfonium, 4-tert-butylphenyldiphenylsulfonium, 4-chlorophenyldiphenylsulfonium, tris(4-phenoxyphenyl)sulfonium, 4-acetonylphenyldiphenylsulfonium, tris(4-thiomethoxyphenyl)sulfonium, or 4-acetamidophenyldiphenylsulfonium.

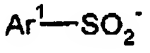
22. (Original) The composition of claim 1, further comprising an ethylenically unsaturated monomer.

23. (Original) The composition of claim 22, wherein the ethylenically unsaturated monomer comprises a monoacrylate, monomethacrylate, diacrylate, dimethacrylate, polyacrylate, polymethacrylate, or combinations thereof.

24. (Original) The composition of claim 1, wherein the arylsulfinate salt has an oxidation potential in N,N-dimethylformamide of 0.0 to +0.4 volts versus a silver/silver nitrate reference electrode.

25. (Previously presented) A composition comprising a an ethylenically unsaturated monomer and a triarylsulfonium arylsulfinate salt comprising:

an anion of Formula I



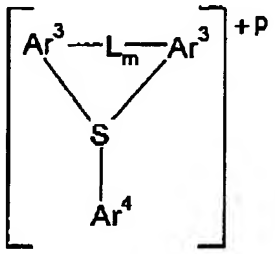
I

wherein $Ar^1$ is a substituted phenyl, an unsubstituted or substituted $C_{7-30}$ aryl, or an unsubstituted or substituted $C_{3-30}$ heteroaryl, said substituted $Ar^1$ having a substituent that is an electron withdrawing group or an electron withdrawing group in combination with an electron donating group; and

and a triarylsulfonium cation,

wherein the composition generates a radical upon exposure to actinic radiation in the wavelength range of 400 to less than 1000 nanometers and wherein the composition is free of an additional component that absorbs actinic radiation in the wavelength range of 400 to less than 1000 nanometers.

26. (Original) The composition of claim 25, wherein the triarylsulfonium arylsulfinate salt has a cation according to Formula V



V

wherein

each $Ar^3$ and $Ar^4$ are independently a $C_{6-30}$ aryl or a $C_{3-30}$ heteroaryl that is substituted or substituted with one or more substituents, each substituent having up to 30 carbon atoms and up to 10 heteroatoms selected from N, S, O, P, As, Si, Sb, B, or Ge; and

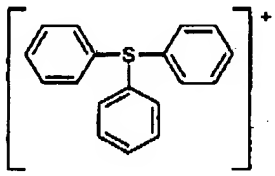
L is a divalent linking group selected from a single bond, oxo, thio, sulfinyl, carbonyl, sulfonyl, methylene, or imino;

p is an integer equal to or greater than 1; and

m is an integer equal to 0 or 1.

27. (Original) The composition of claim 25, wherein the $Ar^1$ group of the anion of the triarylsulfonium arylsulfinate salt is substituted phenyl, unsubstituted or substituted naphthyl, or an unsubstituted or substituted anthraquinonyl, said substituted $Ar^1$ group having a substituent that is an electron withdrawing group or an electron withdrawing group in combination with an electron donating group.

28. (Original) The composition of claim 25, where the triarylsulfonium salt has a cation selected from



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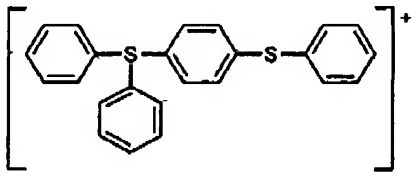

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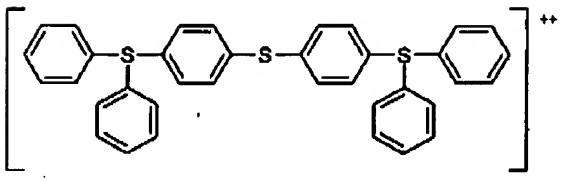

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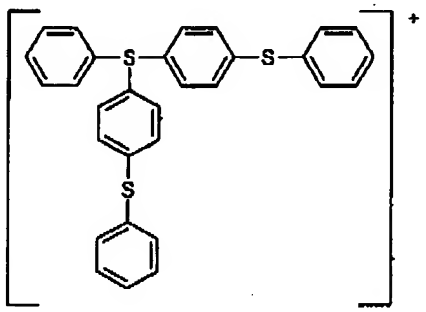

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or combinations thereof that are unsubstituted or substituted with one or more substituents selected from alkyl, alkylcarbonyloxy, alkynyl, alkoxy, alkoxycarbonyl, alkylthio, arylthio, aralkyl, alkenyl, aryl, arylcarbonyloxy, arylcarbonylamido, alkylcarbonylamido, aryloxy, aryloxycarbonyl, alkoxysulfonyl, aryloxysulfonyl, alkylsulfonamido, N-alkylaminocarbonyl, N-arylaminocarbonyl, N-alkylsulfamyl, N-arylsulfamyl, alkylsulfonyl, arylsulfonyl, perfluoroalkyl, perfluoroalkysulfonyl, azo, boryl, halo, hydroxy, mercapto, diarylarsino, diarylstibino, trialkylgermano, trialkylsiloxy, or combinations thereof.

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